

## Notes on Cerambycidae on the Island of Hawaii, 1934 (Col.)

BY O. H. SWEZEY

(Presented at the meeting of September 6, 1934)

While conducting a course in Forest Entomology at the Volcano Branch of the University of Hawaii Summer Session, June 18 to July 27, in Hawaii National Park, Kilauea, Hawaii, opportunity was had for the following observations on the Cerambycidae of the region.

### **Plagithmysus varians** Sharp

Probably this is the most prevalent species of *Plagithmysus* in the region. It is attached to *Acacia koa*. Many koa trees of the region lying to the west and northwest from the Volcano House are in a dying condition. There are some standing dead trees and there are fallen trees in all stages from freshly fallen partly living trees to rotten logs of all stages of decay. On the trunk and branches of the freshly fallen trees the active beetles could readily be found during the middle of the day. Of these same trees, the branches which were in dying condition were well populated with larvae of the beetle feeding beneath the bark; pupae were also found. On standing trunks and dead branches from which the bark has fallen, the surface of the dead wood shows very extensively the borings of the larvae and the exit-holes where beetles have matured and issued, indicating that this species has been present in enormous numbers.

The "giant koa," standing at an elevation of 4,450 feet on the Mauna Loa trail, furnishes a good illustration. This tree has a trunk of the largest diameter that has been seen. It is 10 feet in diameter at a height of 6 feet; has a symmetrical top of numerous diverging branches, and at the present time almost entirely dead, only a few branches on one side showing living foliage. On all of the dead branches, wherever the bark is off, there are numerous burrows and exit-holes exposed, showing that hundreds, if not thousands, of *variens* have bred on this tree. Although to the casual observer it appears that the beetle larvae have been the cause of the death of this tree, as well as the other dead koa trees of the

vicinity, my own observations and all the previous observations of the entomologists point to the presence of the *varians* larvae as a secondary factor, the beetles only coming to oviposit in the bark of the dying branches or of the fallen trees, so that the larvae are living in the decaying or fermenting bark when it is just in the suitable stage for them.

I secured specimens of beetles from fallen trees or reared them from larvae and pupae found underneath bark of dying branches in several localities, as: Kipuka Puauulu (the Bird Park), Ohaieka, Mauna Loa trail at various places up to 5,200 feet, Puu Oo trail up to 4,500 feet, and at the golf grounds. At about 5,000 feet on the Mauna Loa trail a dead *varians* larva was found having a full-grown parasite larva on its exterior. This larva matured to *Eupelmus leptophyas* Perkins.

#### **Plagithmysus bilineatus** Sharp

This species was also found abundantly. It is a species which I had not previously collected. I first found the beetles where they were attracted to ohia lehua logs in a region about two miles north-east from the Volcano House, in Kilauea Settlement Lots, where a large area was being cleared of timber, to be used for firewood. Many freshly cut lehua logs were lying around, and there were cordwood piles. I visited this place three different times and collected beetles from the logs or woodpiles each time, 28 specimens altogether. I also found under bark of lehua stumps, from which the trees had been cut some months previously, larvae and pupae which matured as this species. In two places were cocoon masses of *Ischiogonus palliatus* (Cam.) where the larvae had fed on larvae of *bilineatus*. In one of these masses there were 14 cocoons, from which the adults issued later.

I collected *bilineatus* also from branches remaining where scattering lehua trees had recently been cut to obtain posts, in the forest about one and a half miles northwest of the Volcano House, towards the site of the old koa mill. On two occasions I visited this region and collected a few beetles each time, 10 altogether. An occasional standing dead tree with bark removed, displayed the grooves cut by the larvae of this beetle while the tree was in the dying condition. Apparently there were enough breeding in this way throughout the extensive lehua forest of the region to provide the beetles that find the recently cut trees, no matter where.

**Plagithmysus bishopi** Sharp

A member of the Forest Entomology class found beetles of this species on a *Pelea cinerea* tree in the Bird Park, so that each of the class was supplied with specimens. The tree looked healthy, but it had an injured place at base and a dead spot with exit-holes in it. There were also fresh borings around the dead spot, and in pulling off a piece of bark larvae were found, also a pupa, and a freshly matured beetle in a pupal cell. On a second visit to this same tree more beetles were found, some of them as high as ten feet on the trunk and branches. Probably altogether two dozen beetles were taken.

**Plagithmysus giffardi** Perkins

On the steam bluff trail not more than a half mile from the volcano House, dead *Smilax sandwicensis* vines were found with larvae, pupae and even a matured beetle in its pupal cell in the hollowed out vine. Search was made in other regions, but *Smilax* was scarce, and no evidence of the work of this beetle was found in *Smilax* anywhere else. It was not far from the same place that I first found this beetle breeding in dead *Smilax* vines in 1929. Dr. Perkins and Mr. Giffard both collected *giffardi* on kolea trees (*Suttonia lessertiana*), but did not report rearing it. This summer I examined kolea trees wherever I went in the adjacent forests without finding a trace of the beetle or its work in any of the trees. Dead trees were occasionally met with, and in all cases were well supplied with beetle borings, but they were of a large species of *Holcobius*, and larvae were very abundant. A number of adults of this anobiid were also found in their pupal cells, by chopping up a dead tree. A smaller anobiid was also found.

**Plagithmysus perkinsi** Sharp

There was much evidence of the work of this species in dead *Myoporum sandwicense* trees in the Bird Park and farther mauka. The only specimen obtained was a fine fresh beetle cut out of its pupal cell in a nearly dead tree about 3 miles up on the Puu Oo trail. This was in the Brown's ranch where cattle have run for a long time. Great numbers of dead and fallen trees are full of the burrows of *perkinsi*.

**Plagithmysus vitticollis** Sharp

One beetle was reared from a larva found in the stem of *Vacci-*

*nium calycinum*, July 3, near the Hotel's old vegetable garden site. It was thought at the time to be the larva of *Neoclytarlus atricolor*, which was reared from *Vaccinium peleanum*, Nauhi Gulch, 8,500 ft. in 1931. However, when the adult issued August 20, it proved to be *vitticollis*. On July 8, on Byron Ledge, the work of the larva was seen in *V. calycinum*. The larva works in living stems and bores somewhat spirally very similarly to what the larva of *N. atricolor* does. Previously, *vitticollis* has been collected and reared from *Rubus hawaiiensis*, in which plant it also bores in living stems.

***Neoclytarlus filipes* (Sharp)**

One specimen was taken from a man's coat while searching for beetles among the branches of a large fallen koa tree, along the Mauna Loa trail at about 4,300 ft. It is said to be attached to *Sophora chrysophylla*, though it has also been reared from dead *Maba sandwicensis*.

***Parandra puncticeps* Sharp**

The only specimen obtained was a dead one in a rotten koa log in the vicinity of the old koa mill site, July 15. There were enough large burrows to indicate that the larvae had been very numerous.

***Aegosoma reflexum* Karsch**

The work of this species was found very abundant in rotten koa logs in the Brown's ranch along the Puu Oo trail about three miles. In a small amount of digging, 3 beetles were found in their pupal cells, also a couple of pupae and a half dozen large larvae. By spending time enough a good many could have been obtained.

***Ceresium simplex* (Gyll.)**

While examining dead *Pipturus* trees along the road in the Panaewa forest near Olaa, July 2, larvae and pupae were found which I presumed were *Plagithmysus lamarckianus* Sharp, as this species is attached to *Pipturus*. However, the only one that reared to maturity proved to be *Ceresium simplex*. On July 30, the work of a cerambycid was found in dead branches of *Mezoneurum kauaiense* along the road on north side of Mt. Hualalai. By cutting up dead branches several larvae were found, and soon an adult *Ceresium* in a pupal cell. These are two new host records for this beetle.